

## CLAIM AMENDMENTS

### Claim Amendment Summary

#### **Claims pending**

- At time of the Action: Claims 1-57.
- After this Response: Claims 1-57.

**Canceled or Withdrawn claims:** none.

**Amended claims:** none.

**New claims:** none

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### Claims:

1. **(ORIGINAL)** A method comprising:  
dynamically determining present members of a load-balancing cluster;  
monitoring application-layer availability of one or more members of the  
cluster as such availability is observed from a client-perspective.
2. **(ORIGINAL)** A method as recited in claim 1 further comprising  
exocusterly controlling activity state of the members of the cluster.
3. **(ORIGINAL)** A method as recited in claim 1 further comprising  
exocusterly and selectively deactivating one or more active members of the  
cluster.

1           **4. (ORIGINAL)** A method as recited in claim 1 further comprising,  
2 based upon the monitoring, identifying one or more active members of the cluster  
3 that are presently overwhelmed at the application-layer.

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5           **5. (ORIGINAL)** A method as recited in claim 1 further comprising:  
6 based upon the monitoring, identifying one or more active members of the  
7 cluster that are presently overwhelmed at the application-layer;  
8 exocusterly deactivating one or more members identified by the  
9 identifying.

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11           **6. (ORIGINAL)** A method as recited in claim 1 further comprising  
12 exocusterly and selectively activating one or more inactive members of the  
13 cluster.

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15           **7. (ORIGINAL)** A method as recited in claim 1 further comprising,  
16 based upon the monitoring, identifying one or more inactive members of the  
17 cluster that are not presently overwhelmed at the application-layer.

18  
19           **8. (ORIGINAL)** A method as recited in claim 1 further comprising:  
20 based upon the monitoring, identifying one or more inactive members of  
21 the cluster that are not presently overwhelmed at the application-layer;  
22 exocusterly activating one or more members identified by the identifying.  
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1  
2 9. (ORIGINAL) A method as recited in claim 1 further comprising:

3 based upon the monitoring, identifying one or more active members of the  
4 cluster that are presently overwhelmed at the application-layer and identifying one  
5 or more inactive members of the cluster that are not presently overwhelmed at the  
6 application-layer;

7 exocusterly deactivating one or more active members identified by the  
8 identifying;

9 exocusterly activating one or more inactive members identified by the  
10 identifying.

11  
12 10. (ORIGINAL) A method as recited in claim 1 further comprising  
13 determining a present activity state of members of the cluster.

14  
15 11. (ORIGINAL) A method as recited in claim 1 further comprising:

16 determining a present activity state of members of the cluster;

17 tracking and persisting the activity states of the members of the cluster.

18  
19 12. (ORIGINAL) A method as recited in claim 11, wherein the activity  
20 states include cluster states.

21  
22 13. (ORIGINAL) A method as recited in claim 11 further comprising  
23 reporting a present activity state of one or more members of the cluster.

14. (ORIGINAL) A method as recited in claim 11 further comprising reporting historical record of the activity states of one or more members of the cluster.

15. (ORIGINAL) A method as recited in claim 11 further comprising reporting a present application-layer state of one or more members of the cluster.

16. (ORIGINAL) A method as recited in claim 11 further comprising reporting historical record of the application-layer states of one or more members of the cluster.

17. (ORIGINAL) A method as recited in claim 1, wherein the monitoring comprises monitoring in one or more different application-layer protocols.

18. (ORIGINAL) A method as recited in claim 1, further comprises, based upon the monitoring, determining the application-layer availability of one or more members based upon a indicator of such availability, the indicator sent from a member being monitored.

1           **19. (ORIGINAL)** A method as recited in claim 1, further comprises:  
2           based upon the monitoring, determining the application-layer availability of  
3           one or more members based upon a indicator of such availability, the indicator  
4           sent from a member being monitored;  
5           the member being monitored determining such availability and generating  
6           such indicator.

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8           **20. (ORIGINAL)** A computer-readable medium having computer-  
9           executable instructions that, when executed by a computer, perform the method as  
10          recited in claim 1.

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12          **21. (ORIGINAL)** A method comprising:  
13          monitoring application-layer availability of members of a load-balancing  
14          cluster as such availability is observed from a client-perspective;  
15          exocusterly controlling activity state of the members of the cluster.

16  
17          **22. (ORIGINAL)** A method as recited in claim 21, wherein the  
18          controlling comprises selectively deactivating one or more active members of the  
19          cluster.

20  
21          **23. (ORIGINAL)** A method as recited in claim 21, wherein the  
22          controlling comprises, based upon the monitoring, identifying one or more active  
23          members of the cluster that are presently overwhelmed at the application-layer.  
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1           **24. (ORIGINAL)** A method as recited in claim 21, wherein the  
2 controlling comprises:

3           based upon the monitoring, identifying one or more active members of the  
4 cluster that are presently overwhelmed at the application-layer;

5           exocusterly deactivating one or more members identified by the  
6 identifying.

7  
8           **25. (ORIGINAL)** A method as recited in claim 21, wherein the  
9 controlling comprises selectively activating one or more inactive members of the  
10 load-balancing cluster.

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12           **26. (ORIGINAL)** A method as recited in claim 21, wherein the  
13 controlling comprises, based upon the monitoring, identifying one or more  
14 inactive members of the cluster that are not presently overwhelmed at the  
15 application-layer.

16  
17           **27. (ORIGINAL)** A method as recited in claim 21, wherein the  
18 controlling comprises:

19           based upon the monitoring, identifying one or more inactive members of  
20 the cluster that are not presently overwhelmed at the application-layer;

21           exocusterly activating one or more members identified by the identifying.  
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2       **28. (ORIGINAL)** A method as recited in claim 21, wherein the  
3 controlling comprises:

4       based upon the monitoring, identifying one or more active members of the  
5 cluster that are presently overwhelmed at the application-layer and identifying one  
6 or more inactive members of the cluster that are not presently overwhelmed at the  
7 application-layer;

8       exocusterly deactivating one or more active members identified by the  
9 identifying;

10       exocusterly activating one or more inactive members identified by the  
11 identifying.

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13       **29. (ORIGINAL)** A method as recited in claim 21 further comprising  
14 determining a present activity state of the members of the cluster.

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16       **30. (ORIGINAL)** A method as recited in claim 21 further comprising:  
17 determining a present activity state of the members of the cluster;  
18 tracking and persisting the activity states of the members of the cluster.

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20       **31. (ORIGINAL)** A method as recited in claim 30, wherein the activity  
21 state includes a cluster state.

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23       **32. (ORIGINAL)** A method as recited in claim 30 further comprising  
24 reporting a present activity state of one or more members of the cluster.  
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1           **33. (ORIGINAL)** A method as recited in claim 30 further comprising  
2 reporting historical record of the activity states of one or more members of the  
3 cluster.

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5           **34. (ORIGINAL)** A method as recited in claim 30 further comprising  
6 reporting a present application-layer state of one or more members of the cluster.

7  
8           **35. (ORIGINAL)** A method as recited in claim 30 further comprising  
9 reporting historical record of the application-layer states of one or more members  
10 of the cluster.

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12           **36. (ORIGINAL)** A method as recited in claim 21, wherein the  
13 monitoring comprises monitoring in one or more different application-layer  
14 protocols.

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16           **37. (ORIGINAL)** A computer-readable medium having computer-  
17 executable instructions that, when executed by a computer, performs the method  
18 as recited in claim 21.  
19



1           **38. (ORIGINAL)** A computer-readable medium having computer-  
2 executable instructions that, when executed by a computer, perform a method  
3 comprising:

4           dynamically determining present members of a load-balancing cluster and  
5 an activity state of each member;

6           monitoring application-layer availability of the one or more members of the  
7 cluster as such availability is observed from a client-perspective;

8           exocusterly controlling the activity state of the members of the cluster.

9  
10          **39. (ORIGINAL)** A system comprising:

11          a dynamic cluster-membership determiner configured to exocusterly and  
12 dynamically determine present members of a load-balancing cluster;

13          an exocuster monitor configured to monitor application-layer availability  
14 of the present members of the cluster.

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16          **40. (ORIGINAL)** A system as recited in claim 39 further comprising an  
17 exocuster controller configured to control an activity state of the members of the  
18 cluster.

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20          **41. (ORIGINAL)** A system as recited in claim 39 further comprising an  
21 overload-identifier configured to identify, based upon the monitored availability,  
22 one or more active members of the cluster that are presently overwhelmed at the  
23 application-layer.

1           **42. (ORIGINAL)** A system as recited in claim 39 further comprising an  
2           overload-identifier configured to identify, based upon the monitored availability,  
3           one or more inactive members of the cluster that are not presently overwhelmed at  
4           the application-layer.

6           **43. (ORIGINAL)** A system as recited in claim 39 further comprising a  
7           state-determiner configured to determine a present activity state of members of the  
8           cluster.

10          **44. (ORIGINAL)** A system as recited in claim 39 further comprising:  
11          a state-determiner configured to determine a present activity state of  
12          members of the cluster;

13          a database configured to store the activity states of the members of the  
14          cluster.

16          **45. (PREVIOUSLY PRESENTED)** A system as recited in claim 39,  
17          wherein the exocluster monitor is protocol agnostic.

19          **46. (ORIGINAL)** A system comprising:  
20          an exocluster monitor configured to monitor application-layer availability  
21          of members of a load-balancing cluster from a client-perspective;  
22          an exocluster controller configured to control an activity state of members  
23          of the cluster.

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2       **47. (ORIGINAL)** A system as recited in claim 46, wherein the exocluster  
3 controller is further configured to exocusterly and selectively deactivate one or  
4 more active members of the cluster.

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6       **48. (ORIGINAL)** A system as recited in claim 46 further comprising an  
7 overload-identifier configured to identify, based upon the monitored availability,  
8 one or more active members of the cluster that are presently overwhelmed at the  
9 application-layer.

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11       **49. (ORIGINAL)** A system as recited in claim 46, wherein the exocluster  
12 controller is further configured to exocusterly and selectively activate one or more  
13 inactive members of the cluster.

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15       **50. (ORIGINAL)** A system as recited in claim 46 further comprising an  
16 overload-identifier configured to identify, based upon the monitored availability,  
17 one or more inactive members of the cluster that are not presently overwhelmed at  
18 the application-layer.

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20       **51. (ORIGINAL)** A system as recited in claim 46 further comprising a  
21 state-determiner configured to determine a present activity state of the members of  
22 the cluster.

1           **52. (ORIGINAL)** A system as recited in claim 46 further comprising:  
2           a state-determiner configured to determine a present activity state of the  
3 members of the cluster;  
4           a database configured to store the activity states of the members of the  
5 cluster.

6  
7           **53. (ORIGINAL)** A system as recited in claim 46, wherein the monitor is  
8 protocol agnostic.

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10          **54. (ORIGINAL)** A dynamic, active, exocluster monitoring system for  
11 monitoring application-layer availability of members of a load-balancing cluster  
12 and controlling an activity state of such members, the monitoring system  
13 comprising:

14          an app-monitor configured to exocusterly monitor the members of the  
15 cluster from a client-perspective;

16          a cluster-control configured to exocusterly determine the activity state of  
17 the members of the cluster and to exocusterly control the activity state of the  
18 members of the cluster;

19          a central controller configured to coordinate and control the app-monitor  
20 and the cluster-control.

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22          **55. (ORIGINAL)** A system as recited in claim 54 further comprising a  
23 database configured to store state change information, including cluster state and  
24 application-layer state.  
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1           **56. (ORIGINAL)** A system as recited in claim 54 further comprising  
2 multiple app-monitors.  
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4           **57. (ORIGINAL)** A system as recited in claim 54 further comprising  
5 multiple cluster-controls.  
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